

Disinfection of Aquaculture Water by Ozonation and UV Irradiation generated from Dielectric Barrier Discharge

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Dielectric barrier discharge(DBD) reactor and TiO₂ were applied to disinfect the fresh water system containing bacteria. The occurrence of electric discharge in DBD generates ozone and radiate ultraviolet light. The DBD reactor consisting of a quartz cylinder and a coaxial copper rod was immersed in the contaminated water. The selected bacteria for the disinfection were *Streptococcus* causing severe diseases in both freshwater and marine fishes from cultured and wild populations and *Edwardsiella tarda*, causative agent of edwardsiella septicaemia, which shows the critical lethality in intensive culture system. The performance of ozone, UV light, TiO₂ photocatalyst, and the combination of the above methods was evaluated with a contaminated water. The results show that ozonation indicates the highest performance up to 90% disinfection.